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[Reprinted from THE MEDICAL NEWS, November 10, 1888.]



# A CASE OF ATRESIA ANI URETHRALIS. OPERATION WITH RELIEF.[1]

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THE case I have to report is one of imperforate anus, in which the rectum discharged its contents entirely through the urethra, and in which, finally, by operation, this condition was successfully corrected.

Before proceeding to the account of the case, it may be interesting to consider briefly the development of the organs involved in the deformity, and to see how the separation of the rectum from the urinary passages is accomplished during fœtal life.

In Fig. 1, which is a diagram after Kölliker, we have a representation of the manner in which the allantois folds and divides itself to form the urinary organs and the rectum. At R we see the first indications of the perineum, and the dotted lines show how this fold, as the further development goes on,

[1] Read before the Association of Genito-urinary Surgeons, Washington, September, 1888.

pushes itself down between the rectum and the sinus urogenitalis to form finally a complete separation

FIG. 1.

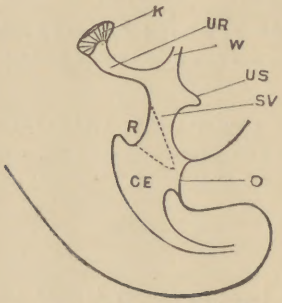


Diagram of arrangement of allantois. K. Kidney. U R. Ureter. W. Wolffian duct. U S. Urachus. S V. Sinus urogenitalis. C E. Cloaca from which rectum is formed. R. Fold from which the perineum is formed. O. Common orifice of urogenital tract and rectum.

FIG. 2.


FIG. 3.

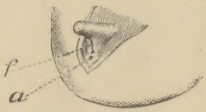


Fig. 2. *p* represents the rudimentary penis; *f*, the furrow from which the urethra and anus are to be formed.

Fig. 3 shows the commencing separation of the urethra from the rectum; *f*, rudimentary urethra; *a*, anal orifice.

between them. Figs. 2 and 3 give some idea of the way in which the perineum comes down and divides the external opening into an anus behind and a

urethra in front. And they also indicate how the outer portion of the urethra, with the penis that encloses it, is formed by a folding of the external surface. A failure in the formation of any part of this perineal septum leaves an opening between that part of the rectum and the urethra or bladder. In woman the communication would be with the vagina.

Accordingly, Förster, in his extremely thorough monograph on malformations, makes three separate forms of this deformity. 1. Atresia ani urethralis. 2. Atresia ani vesicalis. 3. Atresia ani vaginalis. In all of these the anus is imperforate, and the lower end of the rectum opens into the urethra, bladder, or vagina. The opening into the vagina may be quite large and easily provide for the adequate discharge of the feces. On the other hand, however, the communication with the urethra or bladder is always by an extremely small fistulous track, which is too narrow for the sufficient escape of the contents of the bowel, and death is, therefore, a necessary result of this deformity, if not interfered with.

The fistula, when it enters the bladder, does so at the fundus. It may enter the urethra at any point in its course. Förster figures a case in which the rectum ended as a pouch, and from it a long narrow passage led forward close under the skin of the scrotum and along the under surface of the penis to open into the urethra close to the meatus. Ordinarily, however, the communication with the urethra is in the deep part, at or just in front of the membranous portion.

When a case of imperforate anus emptying through

the urethra presents itself for operation, it is naturally of first importance to determine where the rectum enters the urinary passages. If this opening is into the urethra, we may hope to find the rectal pouch low down, where it is accessible to operation, and where it is less likely to be surrounded by peritoneum. To decide this point, the fecal and urinary discharges should be watched carefully. If they come separately and not mixed, it may be concluded that the communication is with the urethra in front of the compressor urethræ muscle; while if they come together, intimately mingled, it is evident that they must have become so mixed in the bladder, where they met and were stirred together before they were voided. We can also judge from the ease of the fecal discharges, and from their amount, something as to the size of the fistulous passage.

In the performance of the operation, the first difficulty is to find the end of the bowel. As its contents have been escaping through the urinary passages the rectal pouch does not form a bulging tumor as in an ordinary case of imperforate anus, but may be, as it was in the case to be reported, quite empty. Fortunately, we may be pretty sure that the cloaca lies in the middle line, and that in order to reach the urethra it must come down over the prostate. Acting upon this consideration the surgeon should have a staff in the urethra as a guide, and should take the greatest pains to adhere to the middle line in his dissection, which should be carried back toward the apex of the prostate.

The patient whose case forms the subject of this paper, was sent to me in February, 1888, by Dr. H. S. B. Smith, of Middleborough, Mass. The little boy was then five weeks old, and was a fairly well-nourished child. He showed no other deformity than the one we have to describe.

At the proper site for the anus there was only a slight dimple of the skin, perhaps one-half an inch deep, and not showing, even in its deepest part, any sign of a mucous membrane. If the finger was introduced into this depression, its presence excited a muscular contraction around it which showed the evident existence of a sphincter at that point. During the five weeks of life, all of the feces had passed through the urethra, and, as they had been always fluid, the child had suffered no apparent inconvenience from this abnormal method of defecation.

By careful watching it was found that the urine and feces never came intimately mixed, but that, if they were passed at the same time, there was first a jet of urine then an escape of feces, followed, perhaps finally, by a gush of clear urine again. Also, at times, the urine was passed without any appearance of fecal matter, or the feces appeared without any passage of urine. It was plain from this way in which urine and feces came separately that the bowel must enter the urethra in front of the cut-off muscle, and it was decided to cut down and try to establish an opening into the rectum just behind this point. This operation was done March 7, 1888.

A sound was placed in the urethra to serve as a landmark, and with the patient in the lithotomy position, an incision was made along the raphe and through the dimple which marked the proper site for the anus. After a rather deep dissection close

to the prostate, the rectum was found and opened by a longitudinal incision about three-fourths of an inch in length. The edges of this opening were stitched down to the anal depression above described, care being taken to attach it within that part surrounded by the sphincter muscle. The portion of the incision behind the anus was brought together with sutures, the part in front being left open for drainage, in case any urine should leak through the wound.

Fecal matter escaped freely during the operation, and, three hours later, there was a large evacuation of liquid feces through the newly opened anus. For thirteen days all of the feces came by the anus and all of the urine by the urethra. On the thirteenth day a little gas was seen to pass the urethra, and an examination of the anus showed that the parts were almost wholly healed, and that the opening into the bowel was beginning to contract somewhat. This was easily stretched with the finger, and from this time dilatation of it was practised every second day.

Except for the rare escape of a trace of feces by the urethra, and the occasional appearance of a few drops of urine by the anus, everything now went well. After a few days, the mother was taught how to dilate the anal opening, and with instructions to do so every day or two, she was allowed to take the child home.

I heard from them again on August 6th (five months after the operation). Dr. Smith then wrote me as follows: "The anus now seems in quite a natural condition. There is much less resistance to the introduction of the finger than there was three months ago. Most of the urine passes normally, but a little is seen now and then to pass the anus.

There is an occasional stain of fecal matter by the urethra, but only when the child is constipated."

The mother writes that the baby is well and strong, and has not had a day of sickness through the summer.

Whether the communication between the rectum and urethra will finally close spontaneously cannot yet be told. It causes now no inconvenience, and can probably be closed by operation when the child ia stronger and the parts larger.